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Hungering for the Past:

Nostalgic Food Labels Increase Purchase Intentions and Actual Consumption

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Xinyue Zhou^{#*}

Zhejiang University

Wijnand A. P. van Tilburg

King's College London

Dongmei Mei[#]

Sun Yat-Sen University and Guizhou Normal University

Tim Wildschut and Constantine Sedikides

University of Southampton

Xinyue Zhou, School of Management, Zhejiang University, People's Republic of China; Wijnand A. P. van Tilburg, Department of Psychology, King's College London, United Kingdom; Dongmei Mei, Department of Psychology, Sun Yat-Sen University, and School of Psychology, Guizhou Normal University, People's Republic of China; Tim Wildschut and Constantine Sedikides, Center for Research on Self and Identity, Psychology Department, University of Southampton, United Kingdom. This research was supported by grants from the National Natural Science Foundation of China (13&ZD073, 91124004, 71672169 and 31322023).

[#]: The first two authors (Xinyue Zhou and Dongmei Mei) contributed equally to this research.

^{*}: Corresponding author: Xinyue Zhou, School of Management, Zhejiang University, 866 Yuhangtang Rd, Hangzhou 310058, P.R. China; Email: xinyuezhou@zju.edu.cn

Abstract

We proposed that nostalgic labels strengthen the appeal of food items when the items are intrinsically nostalgic (e.g., related to one's childhood). Nostalgic labels do so by fostering a sense of food comfort (i.e., safety and security) among potential consumers. Experiment 1, testing a Chinese sample, confirmed that nostalgic (vs. descriptive) labels strengthen purchase intentions of food items when such items are intrinsically nostalgic. Experiment 2 showed that nostalgic (vs. descriptive) food labels strengthen purchase intentions of intrinsically nostalgic items, and do so by virtue of their capacity to elevate food comfort. This experiment tested a U.S. sample, thus broadening the cross-cultural generalizability of the findings. Experiment 3, testing a Chinese sample, replicated the Experiment 2 findings using nostalgic versus descriptive labels of a food item, and ruled out the influence of an alternative mediator, perceived food healthiness. Finally, Experiment 4, testing also a Chinese sample, revealed that restaurant dishes are more likely to be consumed when advertised with a nostalgic (than descriptive) label. The current work makes theoretical contributions to literatures on food consumption and emotions, and has practical implications for harnessing nostalgia for dietary purposes.

Keywords: nostalgia, emotion, marketing, food labels, consumption

Hungering for the Past:

Nostalgic Food Labels Increase Purchase Intentions and Actual Consumption

Nostalgia, “a sentimental longing or wistful affection for the past” (The New Oxford Dictionary of English, 1998, p. 1266), entails memories of momentous life events (e.g., vacations, birthday parties, graduations) that were shared with valued others (e.g., family, friends, partners; Abeyta, Routledge, Roylance, Wildschut, & Sedikides, 2015; Wildschut, Sedikides, Arndt, & Routledge, 2006; Zou, Lee, Wildschut, & Sedikides, 2018). These memories are mostly from one’s childhood, adolescence, or early adulthood, and are fond and treasured (Lasaleta, Sedikides, & Vohs, 2014; Van Tilburg, Bruder, Wildschut, Sedikides, & Göritz, 2019; Zauberman, Ratner, & Kim, 2008). Nostalgia is a self-relevant emotion (Cheung, Wildschut, & Sedikides, 2018; Van Tilburg, Wildschut, & Sedikides, 2018; Vess, Arndt, Routledge, Sedikides, & Wildschut, 2012) that mixes positive affect (e.g., contentment, joy, happiness) with negative affect (e.g., loss, sadness); the aftermath is a bittersweet experience, albeit substantially more sweet than bitter (Hepper, Ritchie, Sedikides, & Wildschut, 2012; Sedikides & Wildschut, 2016). This conceptualization of nostalgia is endorsed by laypersons across at least 18 countries on five continents (Hepper, Wildschut, & Sedikides et al., 2014). In addition, nostalgia is prevalent (i.e., occurs several times a week; Wildschut et al., 2006) and experienced by people across ages (Madoglou, Gkinopoulos, Xanthopoulos, & Kalamaras, 2017; Zhou, Sedikides, Wildschut, & Gao, 2008).

The reconnection with a meaningful and pleasant past that nostalgia facilitates has been welcomed in marketing: nostalgia sells (Holak & Havlena 1992; Muehling, Sprott, & Sultan, 2014; Stern, 1992). Among the wide range of products that nostalgia helps to promote, food figures prominently. Why do consumers prefer food associated with nostalgia? Is nostalgia effective for all food items or more so for some than others? These questions remain unaddressed. In the current investigation, we test if, how, and when nostalgia affects food preferences.

Nostalgia in Marketing

Nostalgic cues can be incorporated in a variety of ways as a marketing tool (Havlena & Holak, 1991). Marketers typically recruit background music, taste, smell, or images to

elicit nostalgia (Muehling & Sprott, & Sprott, 2004). We focused on the relevance of nostalgic food labels. We did so not only for theoretical but also for practical purposes: changing food labels is simple and inexpensive, and therefore easy to implement. In a previous study (Wansink, Painter, & Van Ittersum, 2001), standard menu labels (e.g., ‘grilled chicken’) were replaced with descriptive menu labels (e.g., ‘tender grilled chicken’), which led to a 27% sales increase. Other studies have also modified the valuation of tastes and smells through verbal labels (Lee, Frederick, & Ariely, 2006; Liem, Miremadi, Zandstra, & Keast, 2012). Here, we examined the effectiveness of nostalgic food labels in comparison to descriptive (i.e., non-nostalgic) labels.

Marketers harness nostalgia by reviving promotions, products, and packages associated with the past (Stern, 1992). Although consumers cannot return to the past, they can recreate it through nostalgic consumption activities (Braun-LaTour & LaTour, 2005; Fournier & Yao, 1997; Havlena & Holak, 1991; Sierra & McQuitty, 2007). As Belk (1988, p. 149) put it, nostalgic consumption allows people to “bask in the glory of the past in the hope that some of it will magically rub off.” Nostalgia is enlisted to persuade consumers that products have higher value, as they are connected to a positive, perhaps idealized, past. Accordingly, we propose and test the idea that linking food with nostalgic (rather than descriptive) labels increases consumers’ intentions to purchase and boosts actual purchasing (i.e., food consumption).

Nostalgia and Food

Food and beverages are often advertised with nostalgic appeals (Muehling et al., 2004). Examples of food products with advertising slogans based on nostalgia include cereal (Kellogg’s Rice Krispies), hot drinks (Ovaltine), and candy (Werther’s Original; Brody, 2013; Cui, 2015). The appeal to nostalgia is also evident in the revival of packaging from the past, such as uses of vintage packaging (Cui, 2015). Other examples of nostalgic appeals in food marketing are General Mills’ cereal in retro packaging (Elliott, 2009; Wong, 2010) and Pepsi’s retro style packaging and promotions (Horovitz, 2011).

We examined the effect of nostalgic labels on food purchase intentions and consumption. Food labels may affect purchase intentions, in part, because they simplify the

selection process. Indeed, the valuation of food can be modified through verbal labels (Case, Repacholi, & Stevenson, 2006; Djordjevic, Denic, Anguita, Vasic, & Neifeld, 2008; Lee, Frederick, & Ariely 2006; Liem, Miremadi, Zandstra, & Keast 2012; Wansink et al., 2001). Based on this literature, we reasoned that adding nostalgic (relative to descriptive) labels to food would strengthen purchase intentions or actual consumption.

There are certain foods that are more likely to elicit nostalgia, such as those connected to one's childhood, family members (e.g., grandma), or hometown. To illustrate, Proust (1922/1960) described that smelling and tasting a tea-soaked cake (i.e., madeleine) that he used to enjoy as a child evoked vivid and emotionally charged memories. We refer to food that has particularly high potential to elicit nostalgia as intrinsically nostalgic food. Nostalgic labels may fit better foods with intrinsically nostalgic connotations (e.g., apple pie) than without. More generally, when the food is not intrinsically nostalgic, giving it nostalgia labels (e.g., "grandma's") as opposed to merely descriptive ones (e.g., "delicious") will not necessarily make it more appealing. An ill-suited nostalgic label attached to a product that is not intrinsically nostalgic (e.g., grandma's sushi) may instead draw suspicion, at best not benefiting from the nostalgic label and at worst suffering from it, perhaps due to perceived inauthenticity (Sedikides, Slabu, Lenton, & Thomaes, 2017, 2018). Accordingly, pairing food that is not intrinsically nostalgic with nostalgic labels may diminish the effectiveness of the nostalgic label in comparison to the descriptive label. Based on the above rationale, we articulate our first hypothesis (H1): Attaching nostalgic (as opposed to descriptive) labels to foods strengthens purchase intentions and consumption especially for foods that are intrinsically nostalgic (vs. non-intrinsically nostalgic).

But why would nostalgic labels do so? People often look to the past to find emotional sustenance and security (Stern, 1992). Nostalgia pertains, in part, to the belief in a positive past (Sierra & McQuitty, 2007; Stephan, Sedikides, & Wildschut, 2012). Nostalgic reverie harnesses psychological and physical comfort from this past and transfers it to the present (Van Tilburg, Sedikides, & Wildschut, 2018; Zhou et al., 2012). Nostalgic foods may serve as a source of comfort (i.e., safety and security) in the present by rekindling positive, food-related memories. This rationale leads to our second hypothesis (H2): Nostalgic food labels,

relative to descriptive ones, foster a sense of comfort, which in turn strengthens purchase intentions.

Overview

We hypothesized that nostalgic, relative to descriptive, food labels bolster purchase intentions and consumption for food with intrinsically nostalgic connotations in particular (H1). We also hypothesized that this effect is due to subjective food comfort evoked by nostalgic, as compared to descriptive, food labels (H2). We tested these hypotheses in four experiments. In Experiment 1, using a Chinese sample, we examined if nostalgic (as opposed to descriptive) labels buttress purchase intentions for foods that are intrinsically nostalgic (vs. foods that are not intrinsically nostalgic). In Experiment 2, we examined whether the positive impact of nostalgic (relative to descriptive) labels on purchase intentions is mediated by a sense of comfort. We relied on a U.S. sample in an effort to broaden the cross-cultural generalizability of our findings. In Experiment 3, we attempted to replicate and extend Experiment 2. Testing a Chinese sample, we examined if the positive influence of nostalgic (vs. descriptive) food labels on purchase intentions is mediated by subjective food comfort as opposed to an alternative mechanism, perceived food healthiness. Finally, in Experiment 4, we examined whether nostalgic (vs. descriptive) labels boost actual sales of food items at a restaurant located in a Chinese city.

Experiment 1: Nostalgic Appeals Strengthen Purchase Intentions for Intrinsically Nostalgic Foods

We investigated if the expected increase in purchase intentions due to nostalgic (vs. descriptive) labeling is higher for foods that are intrinsically nostalgic (e.g., candy from one's youth) compared to foods that are not intrinsically nostalgic (e.g., a new soda flavor) (H1). We discuss the creation of materials and stimuli before turning to the description of the experiment.

Nostalgic versus Non-Nostalgic Food Items

We conducted a pilot study to identify which food items are more versus less intrinsically nostalgic. We asked 52 Chinese participants (gender and age information unavailable) from an online platform (sojump.com) to "Please list five common food items

that are most likely to make you feel nostalgic” and “Please list five common food items that are least likely to make you feel nostalgic.” From the generated products, we retained the 23 most frequently mentioned ones. Of these, 11 were listed as nostalgic foods and 12 as non-nostalgic foods. A sample of 72 Sun Yat-Sen University undergraduates (49 women, 23 men; $M_{\text{age}} = 25.15$ years, $SD_{\text{age}} = 3.40$) rated these foods for nostalgia ($-4 = \text{this food is extremely unlikely to make me feel nostalgic}$, $4 = \text{this food is extremely likely to make me feel nostalgic}$). We retained the five most nostalgic foods (toffee, deep-fried dough sticks, bubble gum, bean curd jelly, sugarcoated haws) and the five least nostalgic foods (steak, hamburger, spring water, pizza, sushi). Nostalgic foods ($M = 1.73$, $SD = 1.29$) were rated significantly higher on nostalgia than the non-nostalgic foods ($M = -2.37$, $SD = 1.40$), $F(1, 71) = 416.67$, $p < .001$, $\eta^2 = .854$.

Nostalgic versus Descriptive Labels

We also carried out a pilot study to validate potential nostalgic versus descriptive labels for products to be used in the experiment. First, research assistants went to markets and restaurants to collect 12 relevant labels that were in frequent use. Then, 17 Sun Yat-Sen University undergraduates (10 women, 7 men; $M_{\text{age}} = 26.76$ years, $SD_{\text{age}} = 4.45$) rated the six nostalgic labels and six descriptive labels on how nostalgic, positive, and attractive they were ($1 = \text{not at all}$, $7 = \text{very much}$). We selected five labels that were rated as most nostalgic (hometown's, traditional, childhood's, grandma's, grandpa's) and five positive descriptive labels that were rated as least nostalgic (fragrant, crispy, fresh, flavorful, delicious). The nostalgic labels ($M = 5.61$, $SD = .99$) were rated as significantly more nostalgic than the descriptive ones ($M = 3.34$, $SD = 1.25$), $F(1, 15) = 48.69$, $p < .001$, $\eta^2 = .764$. Further, the labels did not differ on positivity (nostalgic labels: $M = 4.85$, $SD = .80$; descriptive labels: $M = 5.05$, $SD = .77$), $F(1, 16) = .89$, $p = .360$, $\eta^2 = .053$, or attractiveness (nostalgic labels: $M = 4.86$, $SD = .91$; descriptive labels: $M = 5.25$, $SD = .86$), $F(1, 16) = 2.42$, $p = .139$, $\eta^2 = .132$.

Method

Participants and design. We recruited 127 undergraduates (91 women, 36 men; $M_{\text{age}} = 19.68$ years, $SD_{\text{age}} = 1.95$) from Sun Yat-Sen University and remunerated them with ¥10 RMB (\$1.50). We randomly assigned participants to the conditions of a 2 (food type:

nostalgic vs. non-nostalgic) \times 2 (label type: nostalgic vs. descriptive) between-subjects design. We removed one participant from analyses, because she did not pass the attention check.

Procedure and measures. Participants completed the experiment on a desktop computer. Each participant evaluated a single food item / food label combination, selected randomly from a set of 20 combinations. To create these 20 combinations, we used the 10 food items (five nostalgic, five non-nostalgic) and 10 food labels (five nostalgic, five descriptive) that were validated in the pilot study. Each food item was paired with one nostalgic label (e.g., “Traditional Steak”) and one descriptive label (e.g., “Fragrant Steak”). Looked at from a different angle, each food label was paired with one nostalgic food (e.g., “Traditional Toffee”) and one non-nostalgic food (e.g., “Traditional Steak”). Accordingly, each food item and each food label featured twice in the set of 20 combinations, and there were five combinations within each cell of the 2 (food type: nostalgic vs. non-nostalgic) \times 2 (label type: nostalgic vs. descriptive) between-subjects design (see Table 1). Participants read the randomly assigned food item / food label combination and imagined what the food may look like. Then, they indicated their purchase intentions (“How much do you want to purchase this food?” 1 = *not at all*, 7 = *very much*). Finally, participants reported demographics.

Results and Discussion

We conducted a 2 (food type: nostalgic vs. non-nostalgic) \times 2 (label type: nostalgic vs. descriptive) analysis of variance (ANOVA) on purchase intentions. The food-type main effect (nostalgic: $M = 4.67$, $SD = 1.43$; non-nostalgic: $M = 5.01$, $SD = 0.90$) was not significant, $F(1, 122) = 3.02$, $p = .085$, $\eta_p^2 = .024$, and neither was the label-type main effect (nostalgic: $M = 4.98$, $SD = 1.14$; descriptive: $M = 4.74$, $SD = 1.21$), $F(1, 122) = 2.33$, $p = .129$, $\eta_p^2 = .019$. However, the critical Food Type \times Label Type interaction was significant, $F(1, 122) = 4.94$, $p = .028$, $\eta_p^2 = .039$. Participants who evaluated nostalgic foods reported stronger purchase intentions when these foods featured a nostalgic ($M = 5.03$, $SD = 1.35$) than a descriptive ($M = 4.26$, $SD = 1.43$) label, $F(1, 122) = 6.46$, $p = .012$, $\eta_p^2 = .050$. In contrast, participants who evaluated non-nostalgic foods did not differ on purchase intentions

when these foods featured a nostalgic ($M = 4.93$, $SD = .91$) or descriptive ($M = 5.08$, $SD = .90$) label, $F(1, 122) = .265$, $p = .607$, $\eta_p^2 = .002$.

Supplementary analysis. In a supplementary analysis, we followed Judd, Westfall, and Kenny's (2012, 2017) recommendation to treat stimuli as random factors. By so doing, we acknowledge that the selected stimuli are a sample from a larger population to which we wish to generalize.¹ We used Proc Mixed in SAS 9.4 to test a 2 (food type: nostalgic vs. non-nostalgic) \times 2 (label type: nostalgic vs. descriptive) generalized mixed model of purchase intentions, treating food items and labels as random factors. The variance component due to food items was estimated to be 0, and we dropped it from the model. The variance component due to food labels accounted for 3% of the total residual variance. Consistent with the ANOVA results, neither the food-type main effect, $F(1, 114) = 3.28$, $p = .073$, nor the label-type main effect, $F(1, 114) = 1.76$, $p = .187$, was significant. However, the focal Food Type \times Label Type interaction effect was significant, $F(1, 114) = 5.46$, $p = .021$. Participants reported stronger purchase intentions when nostalgic foods were paired with a nostalgic (than descriptive) label, $F(1, 114) = 5.96$, $p = .014$. Participants' purchase intentions of non-nostalgic foods were not significantly influenced by the label-type manipulation, $F(1, 114) = 0.30$, $p = .585$. (Measures of effect size are not readily available in Proc Mixed.)

Consistent with H1, nostalgic (vs. descriptive) labels bolstered purchase intentions when attached to intrinsically nostalgic foods in a Chinese sample. We corroborated this finding in supplementary analyses that treated food items and labels as random factors. Due

¹ Judd et al. (2017) presented a typology for designs with two random factors (participants and stimuli) and a single fixed factor. Our more complex design involves three random factors (i.e., participants, food items, and food labels) and three fixed factors (i.e., food-type main effect, label-type main effect, and Food Type \times Label Type interaction effect). Judd et al. (2017) noted that, in more complex designs, "the number of variance components can increase exponentially ... leading to possible estimation problems in estimating the parameters of the linear mixed model" (p. 622). To remedy this issue, they proposed that "respecification may help by dropping some of the variance components that represent higher-order interactions that might reasonably be expected to be nonexistent" (p. 622). We followed their advice and specified three random variance components for the intercept: one due to participants (analogous to the residual error term in a standard ANOVA), one due to food items, and one due to food labels.

to using fewer food items and labels, our subsequent experiments were not amenable to treating stimuli as random factors. We return to this issue in the General Discussion.

Experiment 2: Nostalgia Strengthens Food Purchase Intentions through a Sense of Comfort

In Experiment 2, we examined why nostalgic labels bolster purchase intentions of intrinsically nostalgic foods. Specifically, we tested a variant of H1. We wondered whether using a nostalgic (vs. descriptive) label would suffice to strengthen purchase intentions of foods linked to one's childhood (and thus being intrinsically nostalgic). Importantly, we also examined if purchase intentions are due, at least in part, to a heightened sense of comfort (H2). To increase the cross-cultural generalizability of our findings, we employed a U.S. sample.

Method

Participants and design. We recruited 225 MTurkers from the USA (106 women, 119 men; $M_{\text{age}} = 35.81$ years, $SD_{\text{age}} = 9.93$). We removed data from 43 participants, because they failed a multiple-choice attentional check (He & Bond 2015; Oppenheimer, Meyvis, & Davidenko 2009). The final sample consisted of 182 participants (100 men, 82 women; $M_{\text{age}} = 35.93$ years, $SD_{\text{age}} = 9.97$).

We selected two food items linked to one's childhood, and thus likely to be intrinsically nostalgic: apple pie and frosted flakes cereal. We randomly assigned participants to evaluate a food item paired with a nostalgic or descriptive label. Given that we recruited U.S. participants, it was necessary to validate a new set of nostalgic ("grandma's homemade," "traditional") and descriptive ("delicious," "fabulous") labels in a pilot study with 95 U.S. MTurk participants (64 men, 31 women; $M_{\text{age}} = 28.00$ years, $SD_{\text{age}} = 5.73$). Participants' ratings (1 = *not at all*, 7 = *extremely*) revealed that the pair of nostalgic versus descriptive labels differed significantly on nostalgia ("How nostalgic do you think this word is?" nostalgic: $M = 4.93$, $SD = 1.28$; descriptive: $M = 3.97$, $SD = 1.54$), $F(1, 94) = 22.71$, $p < 0.001$, $\eta^2 = .195$, positivity ("How positive do you think this word is?" nostalgic: $M = 4.48$, $SD = 1.11$; descriptive: $M = 5.68$, $SD = 1.18$), $F(1, 93) = 77.72$, $p < .001$, $\eta^2 = .455$, or attractiveness ("How attractive do you think this word is?" nostalgic: $M = 4.02$, $SD = 1.20$;

descriptive: $M = 5.40$, $SD = 1.14$), $F(1, 93) = 98.49$, $p < .001$, $\eta^2 = .514$.

Procedure and measures. Participants saw a photograph of either a box of apple pie or frosted flakes cereal (see Appendix). In the nostalgia condition, we displayed the label “Grandma’s Homemade Apple Pie” underneath the apple pie photograph, and the label “Traditional Frosted Flakes” underneath the frosted flake photograph. In the control condition, we labeled the apple pie as “Delicious Apple Pie” and the frosted flakes as “Fabulous Frosted Flakes.” Next, participants stated their purchase intentions: “How much do you want to purchase this?” (1 = *not at all*, 7 = *very much*). Subsequently, they rated their subjective food comfort: “How safe does this food make you feel?” and “How secure does this food make you feel?” (1 = *not at all*, 7 = *very much*). We averaged responses to the latter two items into a food comfort index (Cronbach’s $\alpha = .97$). Finally, participants reported demographics.

Results and Discussion

Purchase intentions. We conducted a one-way ANOVA on purchase intentions. Participants were significantly more willing to purchase food items that were accompanied by nostalgic ($M = 4.02$, $SD = 1.88$) than descriptive ($M = 3.41$, $SD = 1.93$) labels, $F(1, 180) = 4.68$, $p = .032$, $\eta^2 = .025$. Nostalgic labels boosted purchase intentions (H1).

Food comfort. We also conducted a one-way ANOVA on food comfort. Nostalgic labels ($M = 4.33$, $SD = 1.80$) fostered significantly more food comfort than descriptive labels ($M = 3.67$, $SD = 1.70$), $F(1, 180) = 6.46$, $p = .012$, $\eta^2 = .035$.

Mediation analysis. To find out if food comfort mediated the effect of nostalgic (vs. descriptive) labels on purchase intentions, we conducted a bootstrapped mediation analysis (Hayes 2013; Zhao, Lynch and Chen 2010). When we included food comfort as a mediator, the label-type effect was no longer significant, $B = .19$, $SE = .23$, 95% $CI [-.27, .65]$. Crucially, the indirect effect of label type on purchase intentions via food comfort was significant, $B = .42$, $SE = .17$, 95% $CI [.09, .75]$. As illustrated in Figure 1, nostalgic (vs. descriptive) labels fostered food comfort, and food comfort in turn predicted stronger purchase intentions.

In support of H1, nostalgic labels increase purchase intentions of food items linked to

one's childhood in a U.S. sample. In support of H2, food comfort plausibly mediated the influence of nostalgic labels on food purchase intentions.

Experiment 3: Nostalgia Strengthens Food Purchase Intentions via a Sense of Comfort rather than Perceived Healthiness

In Experiment 3, we re-tested H1 and H2 in a Chinese sample. We introduced four alterations. First, we used a different food item deemed by relevant authors to be linked to childhood in China, namely, roast chicken. Second, we used slightly different nostalgic (i.e., “hometown’s”) and descriptive (i.e., “tasty”) labels. Third, to increase ecological validity, we instructed participants that the experiment involved the evaluation of restaurant menus. Fourth, and most importantly, we tested the viability of an alternative mediator, namely, perceived food healthiness. Prior research suggests that foods with nostalgic, or at least positive, connotations may be perceived as being produced with organic, natural, or traditional craft methods (Cicia, Del Giudice, & Ramunno, 2009; Viladrich & Tagliaferro, 2016). Although these methods are not necessarily healthier than regular alternatives (Huber, Rembiałkowska, Średnicka, Bügel, & Van De Vijver, 2011), people may nonetheless perceive them as more conducive to health (Harper & Makatouni, 2002). It is therefore possible that nostalgic labels make food seem healthier, which could in turn boost purchase intentions.

Method

Participants and design. We recruited 100 Sun Yat-Sen University undergraduates (73 women, 27 men; $M_{\text{age}} = 19.68$ years, $SD_{\text{age}} = 1.41$) in exchange for course credit. We randomly assigned participants to two conditions (label: nostalgic vs. descriptive).

Procedure and measures. We handed participants a questionnaire packet and informed them that the experiment concerned the evaluation of restaurant menus. We then presented them with a picture of roast chicken (see Appendix). A label appearing above the roast chicken read “Hometown’s Roast Chicken” in the nostalgic label condition and “Tasty Roast Chicken” in the descriptive label condition. As in Experiments 1-2, participants indicated their purchase intentions (“how much do you want to purchase the chicken?” 1 = *not at all*, 7 = *very much*). As in Experiment 2, participants rated the food item on comfort (“how safe does this food make you feel” and “how secure does this food make you feel?” 1

= *not at all*, 7 = *very much*). We averaged responses to these two items to create a food comfort index (Cronbach's $\alpha = .84$). Unique to this experiment, participants also rated the perceived healthiness of the food item ("To what extent do you think the item is healthy?" 1 = *not at all*, 7 = *very much*). Responses to demographic questions concluded the experimental session.

Results and Discussion

Purchase intentions. We conducted a one-way ANOVA on purchase intentions. In replication of Experiments 1-2, participants reported stronger purchase intentions for food paired with a nostalgic label ($M = 3.87$, $SD = 1.95$) compared to food paired with a descriptive label ($M = 3.10$, $SD = 1.79$), $F(1, 98) = 4.11$, $p = .045$, $\eta^2 = .040$.

Food comfort. In replication of Experiment 2, a one-way ANOVA on the food comfort index showed that participants perceived food with a nostalgic label ($M = 4.63$, $SD = 1.40$) as more comforting than food with a descriptive label ($M = 3.97$, $SD = 1.59$), $F(1, 98) = 4.97$, $p = .028$, $\eta^2 = .048$.

Perceived food healthiness. A one-way ANOVA on perceived food healthiness indicated that participants did not perceive food with a nostalgic label ($M = 3.12$, $SD = 2.13$) as healthier than food with a descriptive label ($M = 2.85$, $SD = 1.89$), $F(1, 98) = 0.42$, $p = .519$, $\eta^2 = .004$.

Mediation analyses. To test if food comfort and perceived food healthiness plausibly mediated the label-type effect on purchase intentions, we conducted a bootstrapped mediation analysis (Hayes, 2013; Zhao, Lynch, & Chen 2010). As illustrated in Figure 2, the label-type effect on purchase intentions was no longer significant when food comfort and perceived food healthiness were simultaneously included as mediators, $B = .54$, $SE = .37$, 95% $CI [-.19, 1.27]$. Crucially, the indirect effect of label type on purchase intentions via feelings of food comfort was significant, $B = .26$, $SE = .15$, 95% $CI [.04, .64]$. The indirect effect of label type on purchase intentions via perceived food healthiness was not significant, $B = -.04$, $SE = .07$, 95% $CI [-.25, .05]$.

The results are consistent with H1 and H2. They support the idea that nostalgic (vs. descriptive) food labels increase purchase intentions and do so by virtue of their capacity to

induce a sense of food comfort, but not perceptions of healthiness. The results were obtained in a more naturalistic setting and with the mere ascription of labels (i.e., nostalgic vs. descriptive) to a food item linked to one's childhood.

Experiment 4: A Field Test of the Influence of Nostalgic Labels on Food Consumption

In the final experiment, we tested the robustness of H1 in the field (i.e., a restaurant) assessing consumption (i.e., sales figures) among Chinese participants. As in Experiment 3, we used a food item that we thought is linked to childhood (i.e., “fried tofu”). Further, we paired this food item either with nostalgic labels (“grandma’s,” “nostalgic”) or descriptive labels (“tasty,” “delicious”). We expected that nostalgic (vs. descriptive) food labels would increase food consumption.

Method

Participants and design. Participants were 2,426 customers of a Chinese fast food restaurant located in the northern Chinese city of Ulanhot, boasting a population of approximately 1.6 million people. We carried out the experiment in this, relatively large, restaurant (1 single-customer table, 15 tables for 2 customers, 17 tables for 3 customers, 19 tables for 4 customers, 8 tables for 5 customers, 1 table for 7 customers, and 1 table for 14 customers). The restaurant menu featured 14 meat dishes and 2 vegetarian dishes. On average, this restaurant served 359.60 patrons per day. The restaurant owner informed us that the majority of customers visited it less than once per month. The managers and customers received no monetary compensation for their participation and were unaware of the hypothesis.

Procedure and measures. Before the experiment started, we selected fried tofu as our target dish. We did so, not only because we thought it is linked to childhood, but also because the dish is suitable for vegetarians and non-vegetarians, and it was at the midpoint of the price range on the menu (costing 16 Yuan or \$2.40).

We used two nostalgic labels (i.e., “nostalgic fried tofu,” “grandma’s fried tofu”) and two descriptive labels (i.e., “tasty fried tofu,” “delicious fried tofu”) from Study 1. During four consecutive weeks, the labels appeared on the menu as well as on a poster display. Each week featured one of the four labels. The menu was made of strong double-sided, laminated

card (20 cm × 30 cm). It was also presented on a poster (53 cm × 57 cm) mounted in a lighted box near the ordering area. We displayed the label “Nostalgic Fried Tofu” in the first week, the label “Tasty Fried Tofu” in the second week, the label “Grandma’s Fried Tofu” in the third week, and the label “Delicious Fried Tofu” in the fourth week. The content of these dishes remained unaltered. We displayed the nostalgic labels for 13 days, and the descriptive labels for 14 days. The experiment was suspended for one day due to a power outage, and this was a day when the nostalgic labels were scheduled for display.

Results and Discussion

On average, the product with nostalgic labels was ordered 82 times per day (accounting for 7.08% of total daily orders), whereas the same product with descriptive labels was ordered 46 times per day (accounting for 3.65% of total daily orders). Nostalgic labels (compared to descriptive ones) increased the percentage of food orders, $\chi^2(1) = 14.26, p < .001$.

We proceeded to treat days as units of analysis and use the percentage of target item (fried tofu) orders out of the total daily orders as the dependent variable. This index takes into account the fact that the number of purchases differed across weeks. We conducted an ANOVA on the daily sales ratio of the target product (tofu). Nostalgic labels ($M = 7.66\%$, $SD = .05$) increased the percentage of orders of the target product compared to descriptive labels ($M = 3.74\%$, $SD = .03$), $F(1, 25) = 5.51, p = .027, \eta^2 = .181$.

Customers were more likely to consume fried tofu when it was accompanied by a nostalgic (compared to a descriptive) label. Experiment 4 provides evidence that nostalgic food labels increase actual consumption, in support of H1.

General Discussion

Nostalgia entails fond recollections. The emotion represents symbolic connections with important persons or events from one’s past, especially childhood or adolescence. Despite its elements of longing or yearning, the emotion is mostly positive. It is not surprising, then, that people find it meaningful or personally relevant (Sedikides & Wildschut, 2018; Sedikides, Wildschut, Arndt, & Routledge, 2008; Sedikides et al., 2015). We examined, in four experiments, whether nostalgic labels strengthen participants’ purchase

intentions and increase consumption of food items. In particular, we hypothesized (H1) that attaching nostalgic labels to foods increases their appeal when they are intrinsically nostalgic (e.g., related to one's childhood). Furthermore, we hypothesized (H2) that nostalgic labels render food items appealing, in part because they imbue a sense of food comfort. The cumulative results were consistent with the hypotheses.

In Experiment 1, we paired food items with nostalgic or descriptive labels. We did so for items that had either strong (e.g., toffee) or weak (e.g., sushi) nostalgic connotations for Chinese undergraduates. Nostalgic labels strengthened purchase intentions for food items with strong (vs. weak) nostalgic connotations (H1). In Experiment 2, using an intrinsically nostalgic (i.e., linked with one's childhood) food item that we paired with nostalgic or descriptive labels, we tested and confirmed the replicability of Experiment 1 among U.S. participants. We also tested and found that the effect of nostalgia on purchase intentions was due to a sense of food comfort. The results supported H1 and H2, while enhancing the cross-cultural scope of our research. In Experiment 3, relying on a Chinese sample, we further replicated the mediational role of food comfort and ruled out an alternative mediator, perceived food healthiness (H1, H2). Here, we also paired an intrinsically nostalgic food item with a nostalgic or descriptive label. Finally, in Experiment 4, we examined the effect of nostalgic labels on actual food consumption in a restaurant located in a Chinese city. We measured purchases for four weeks. During this period, we alternated the advertising of an intrinsically nostalgic dish (fried tofu) with nostalgic labels and descriptive labels. In support of H1, the dish was ordered more frequently when paired with nostalgic (as opposed to descriptive) labels. Nostalgic labels, then, have a tangible impact on actual consumption. This finding bolsters the external validity of our research.

Contributions, Implications, and Applications

Our research contributes to a deeper understanding of the motivations underlying food purchase intentions and consumption, and in particular the role of emotion. Much work that links emotion to food consumption has focused on eating as a potentially undesirable strategy to cope with negative transient affect (Arnou, Kenardy, & Agras, 1995; Geliebter, & Aversa, 2003). For example, eating serves as source of distraction (Spoor, Bekker, Van Strien, & Van

Heck, 2007) and numbs self-awareness at times of distress (Moynihan, Igou, & Van Tilburg, 2017; Moynihan et al., 2015). Our findings indicate that food consumption may additionally be a vehicle for reconnecting nostalgically to one's past.

Moreover, our findings raise the possibility that nostalgic labels be implemented in the promotion of healthy eating. Comparatively healthy products that are intrinsically nostalgic (because, for example, they cue to cherished childhood events) may become popularized by attaching a nostalgic label to them. Perhaps traditional Western Christmas foods, such as parsnip or Brussels sprouts, might show a boost in popularity, if marketed nostalgically (e.g., "Granny's Home-cooked Christmas Sprouts"). By the same token, our findings suggest that the use of nostalgic labels for intrinsically nostalgic, but relatively unhealthy, foods (e.g., toffee) could raise their popularity and thus contribute to unhealthy eating. Marketers and policy makers may take heed of such uses of nostalgic labels.

For the most part, the relevant literature emphasizes the emotional experience of nostalgia (Sedikides & Wildschut, 2016, 2018), its cognitive profile (Hepper et al., 2012; Van Tilburg et al., 2019), and the psychological processes or behaviors that it arouses (Mei, Li, & Wang, 2018; Turner, Wildschut, & Sedikides, 2012, 2018; Wohl et al., 2018; Zhou, Wildschut, Sedikides, Chen, & Vingerhoets, 2012). The current research deviates from this emphasis. Rather than treating nostalgia as a mostly internal process, it examined nostalgia as represented externally, in the form of food items (e.g., toffee) or labels (e.g., "traditional"). This approach to nostalgia is novel. Indeed, few investigations have examined nostalgia as a property of external objects, such as smells (Muehling et al., 2004; Reid, Green, Wildschut, & Sedikides, 2015) or music (Barrett et al., 2010; Cheung et al., 2013). To a considerable degree, whether objects are nostalgic depends on people's attributions and personal experiences (Barrett et al., 2010; Van Tilburg et al., 2019). Yet, the finding that external objects can be generally classified and recognized as more or less nostalgic demonstrates an intriguing characteristic of nostalgia: There is consistency and consensus in people's attributions of what makes an object nostalgic.

Limitations and Future Directions

We examined the influence of nostalgic labels on purchase intentions and behavior in

two cultures: China (Experiments 1, 3-4) and the USA (Experiment 2). Although our findings replicated across cultures, future work will do well to examine the impact of nostalgic labels in varied cultural contexts. Importantly, the specific food items that are intrinsically nostalgic will differ across cultures, something we incorporated. For example, it might well be that the tofu dish used in Experiment 4, which can be intrinsically nostalgic in China, does not benefit from nostalgic labelling in the USA. Researchers wishing to implicate nostalgic appeals will need to select carefully their products in order to ascertain that they are intrinsically nostalgic in the given culture.

We focused on nostalgic labels in the context of food. We did so based on the assumptions that food lends itself particularly well to nostalgic appeals and that past experience plays a key role in determining food consumption (Garcia et al., 1974). Nostalgic appeals can rekindle positive, food-related memories that connote comfort. Of course, it is likely that nostalgic labels also work for other types of products. Although addressing this issue is beyond the scope of the present investigation, we argue that whether a particular product benefits from nostalgic labels will depend on the degree to which it is intrinsically nostalgic. Furthermore, nostalgic connotations may be more beneficial for some product categories than for others.

Our research did not address the role of individual differences. It might well be that some people are more easily persuaded by nostalgic labels than are others. For example, those who are high in need for closure focus more on peripheral features (e.g., name) than central features (e.g., price) of food items (Vermeir, Van Kenhove, & Hendrickx, 2002). Possibly, people high in need for closure are more prone to being persuaded by nostalgic labels. Another set of individual differences, which may increase the appeal of nostalgic labels, are trait loneliness and boredom. People who are lonely, anxious, or bored use nostalgia to counteract their adverse state (Van Tilburg, Igou, & Sedikides, 2013; Zhou et al., 2008). These people might subsequently be more inclined to purchase food with nostalgic labels.

A limitation of our studies is that they generally featured a small number of food items and labels. Experiment 2 featured two food items (apple pie and frosted flakes) and

Experiments 3-4 featured a single food item (roast chicken and fried tofu, respectively). Furthermore, Experiments 2-4 used a small selection of nostalgic and descriptive labels, and these labels were not crossed with food items (e.g., in Experiment 2, “grandma’s homemade” was paired only with “apple pie,” and “traditional” was paired only with “frosted flakes”). These design limitations ruled out the possibility of treating stimuli (e.g., food items and labels) as random factors to acknowledge that they were a sample from a larger population of stimuli to which we wish to generalize (Judd et al., 2012, 2017). Experiment 1 was an exception, featuring 10 food items and labels (although only partially crossed; see Table 1). Results of a supplementary analysis, in which we treated food items and labels as random factors, supported H1. Nevertheless, future replications and extension of our findings should feature larger samples of food items and labels to verify generalizability across stimuli.

In conclusion, attaching nostalgic labels to food items (especially those that are intrinsically nostalgic) strengthens purchase intentions due to felt comfort, and increases actual consumption. Our findings pioneer the role of nostalgia in food consumption and generate promising research paths and applications.

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Table 1. Overview of Food Item / Food Label Combinations Within Cells of the 2 (Food Type: Nostalgic vs. Non-Nostalgic) \times 2 (Label Type: Nostalgic vs. Descriptive) Between-Subjects Design of Experiment 1.

Food-type manipulation	Label-type manipulation	
	Nostalgic	Descriptive
Nostalgic	Traditional toffee	Fragrant toffee
	Hometown deep-fried dough sticks	Crispy deep-fried dough sticks
	Childhood bubble gum	Fresh bubble gum
	Grandma's bean curd jelly	Flavorful bean curd jelly
	Grandpa's sugarcoated haws	Delicious sugarcoated haws
Non-nostalgic	Traditional steak	Fragrant steak
	Hometown hamburger	Crispy hamburger
	Childhood spring water	Fresh spring water
	Grandma's pizza	Flavorful pizza
	Grandpa's sushi	Delicious sushi

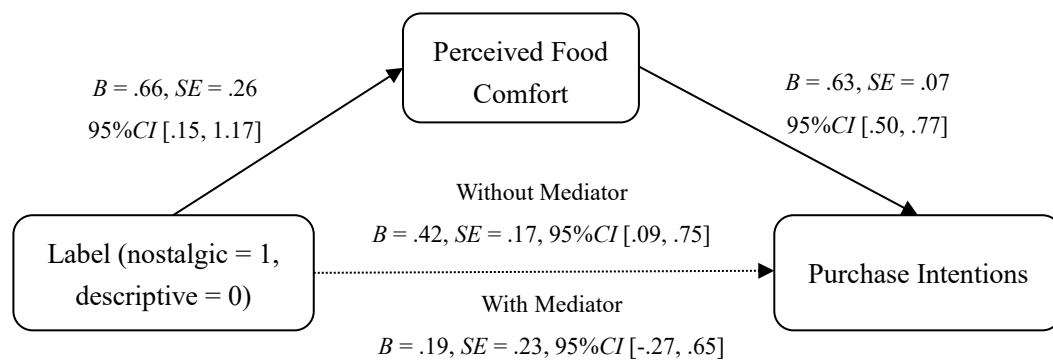


Figure 1. Perceived food comfort as mediator of nostalgia's effect on purchase intentions in Experiment 2.

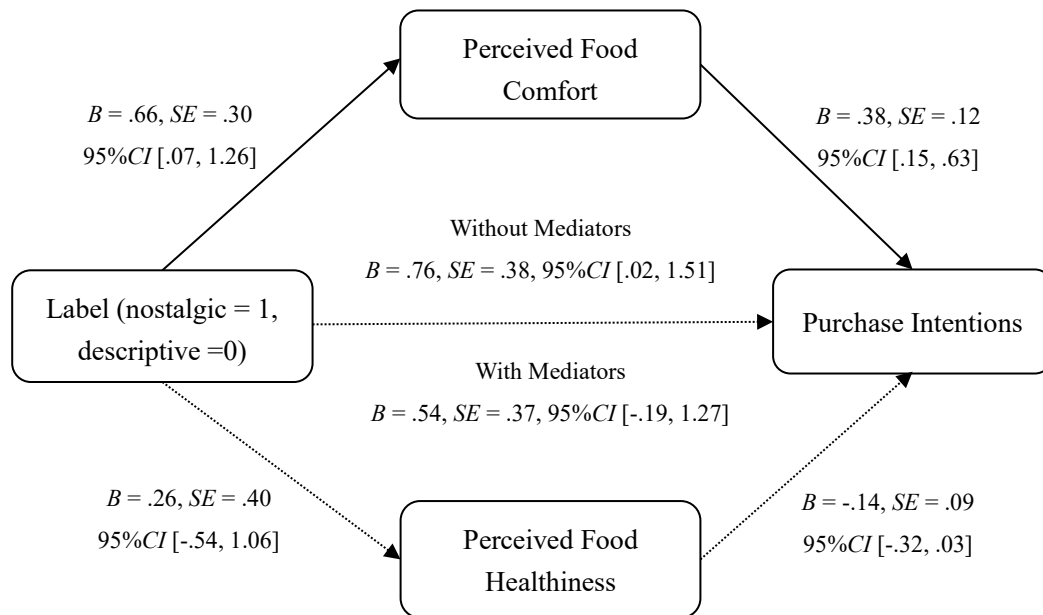
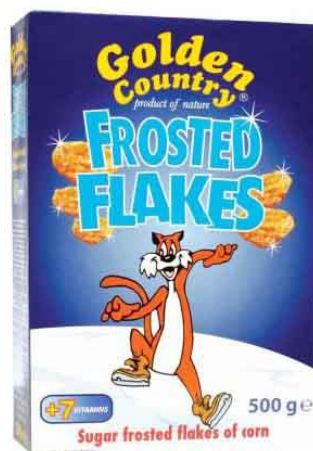


Figure 2. Perceived food comfort versus perceived food healthiness as mediators of nostalgia's effect on purchase intentions in Experiment 3.

Appendix



Photographs of Apple Pie and Frosted Flakes in Experiment 2

Photograph of Roast Chicken in Experiment 3

